

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-95. (canceled)

96. (currently amended) ~~The An isolated nucleic acid molecule according to claim 95, wherein said sequence comprises comprising SEQ ID NO: 3.~~

97-98. (canceled)

99. (currently amended) A method of increasing in a ~~Cantharanthus~~ Catharanthus plant cell the expression of one or more genes involved in the biosynthesis of tryptophane or tryptamine, said method comprising the steps of:

a) transforming the cell with a genetic construct comprising a nucleotide sequence encoding an AP2-domain transcription factor, operably linked to an expression regulating sequence that is operable in said cell; and,

b) cultivating said cell under conditions such that the nucleotide sequence is expressed in said cell;

wherein said nucleotide sequence encodes an AP2-domain transcription factor selected from:

i) a transcription factor having the amino acid sequence of SEQ ID NO: 6; and

ii) a transcription factor having an amino acid sequence that comprises at least amino acids 68-179 of SEQ ID NO: 6,

wherein the transcription factor enhances the biosynthesis in *Cantharanthus Catharanthus roseus* cells of at least one of tryptophane or tryptamine, when stably expressed in said *C. roseus* cells from a genetic construct comprising a sequence coding for the transcription factor operably linked to a plant promoter in a sense orientation.

100. (currently amended) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

a) SEQ ID NO: 3; and[, ]

b) a nucleotide sequence encoding an AP2-domain transcription factor selected from the group consisting of

i) SEQ ID NO: 6;

ii) a transcription factor comprising amino acids 68-203 of SEQ ID NO: 6; and

iii) a transcription factor comprising amino acids 1-179 of SEQ ID NO: 6.

101. (currently amended) A method of increasing in a Cantharanthus Catharanthus plant cell the level(s) of expression of tryptamine or tryptophane, said method comprising the steps of:

a) transforming the cell with a genetic construct comprising a nucleotide sequence encoding an AP2-domain transcription factor, operably linked to an expression regulating sequence that is operable in said cell; and,

b) cultivating said cell under conditions such that the level of AP2-domain transcription factor is expressed in said cell;

wherein said nucleotide sequence encodes an AP2-domain transcription factor selected from:

i) a transcription factor having the amino acid sequence of SEQ ID NO: 6;

ii) a transcription factor comprising amino acids 68-203 of SEQ ID NO: 6; and

iii) a transcription factor comprising amino acids 1-179 of SEQ ID NO: 6,

wherein the transcription factor enhances the biosynthesis of at least one of tryptophane or tryptamine, when stably expressed in said cells from a genetic construct comprising a sequence coding for the transcription factor operably linked to a plant promoter in a sense orientation.

102. (currently amended) The method according to claim 101, wherein the plant cell is Cantharanthus Catharanthus roseus.

103. (currently amended) The method according to claim 99, wherein the plant cell is Cantharanthus Catharanthus roseus.

104. (new) The method according to claim 99, wherein the nucleotide sequence that encodes an AP-2 domain transcription factor is a transcription factor having an amino acid sequence of SEQ ID NO: 6.

105. (new) The method according to claim 99, wherein the nucleotide sequence that encodes an AP-2 domain transcription factor has an amino acid sequence that comprises at least amino acids 68-179 of SEQ ID NO: 6.

106. (new) The isolated nucleic acid molecule according to claim 100, wherein the nucleotide sequence is a nucleotide sequence encoding an AP-2 domain transcription factor comprising SEQ ID NO: 6.

107. (new) The isolated nucleic acid molecule according to claim 100, wherein the nucleotide sequence is a nucleotide sequence encoding an AP-2 domain transcription factor comprising amino acids 68-203 of SEQ ID NO: 6.

108. (new) The isolated nucleic acid molecule according to claim 100, wherein the nucleotide sequence is a nucleotide sequence encoding an AP-2 domain transcription factor comprising amino acids 1-179 of SEQ ID NO: 6.

109. (new) The method according to claim 101, wherein the nucleotide sequence encodes an AP-2 domain transcription factor having the amino acids of SEQ ID NO: 6.

110. (new) The method according to claim 101, wherein the nucleotide sequences encodes an AP-2 domain transcription factor comprising amino acids 68-203 of SEQ ID NO: 6.

111. (new) The method according to claim 101, wherein the nucleotide sequence encodes an AP-2 domain transcription factor comprising amino acids 1-179 of SEQ ID NO: 6.